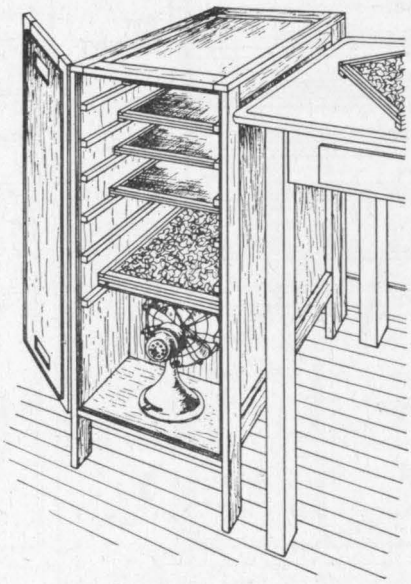
A Homemade Food Dehydrator



WITH THE GREAT INCREASE in the number of home gardens, many families may grow more food than they will be able to use fresh or to preserve by the usual methods. Dehydrating food at home offers a means of saving this surplus. The dehydrator shown here is economical to build, simple to operate, and will easily take care of the needs of one family. When not in use as a dehydrator, solid shelves can be inserted and the cabinet used for storage.

Cabinet and trays. The cabinet has an inside width of 14 inches and an inside length of 24 inches. The frame is built of standard 1-by-2-inch finished lumber. Walls are inclosed with hard panelboard, plywood, or insulation board. The drying chamber holds 6 trays, each 13¾ inches wide and 18 inches long, spaced 3 inches apart. Total tray surface is about 10½ square feet. Since the trays are 6 inches shorter than the inside length of the cabinet, enough space is left at the front and the back for air to circulate. Being slightly narrower than the cabinet, the trays can be removed easily. A strip tacked diagonally at the back on each side of the cabinet holds the trays out from the back in such a way that the air circulates evenly over the various trays. When the trays are pushed back against the strip, the bottom tray is 3 inches from the back of the cabinet and the top tray 1 inch.

Trays are made of wood and cloth so as to use as little scarce material as possible. Standard lattice strips 1⅛ inches wide can be ripped into 2 pieces for the outer frames and into 3 pieces for the slats and crosspieces. These crosspieces are spaced about 1½ inches apart and covered with good-quality cheesecloth or other loosely woven material. Brads are used to tack the narrow slats around the edges of the trays over the cloth. To keep from soiling this cloth, another layer of cloth should be spread over each tray before the food to be dried is put on it.

Method of heating. Heat is supplied by electric-light bulbs in this design, altho a small space heater or cone-type screw-in heating

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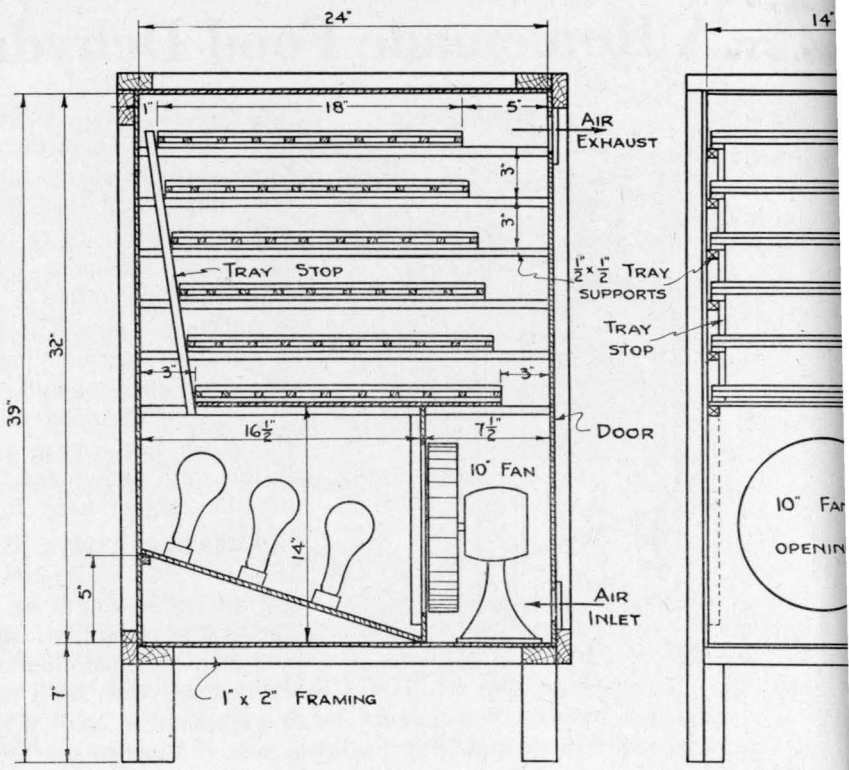
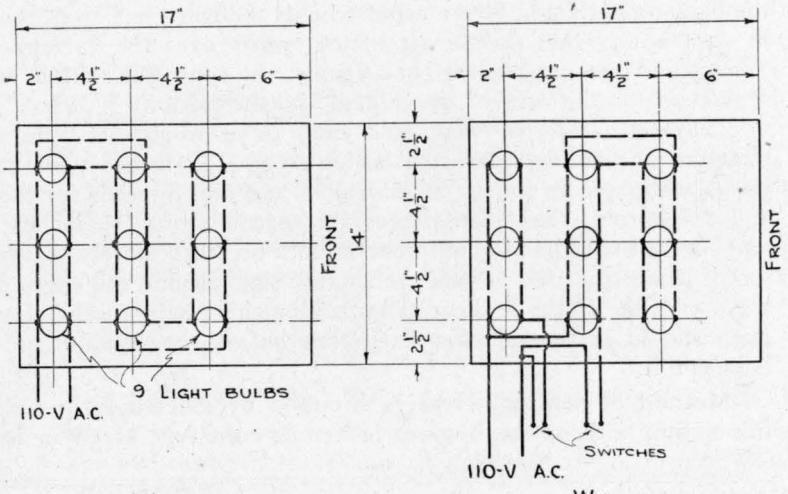
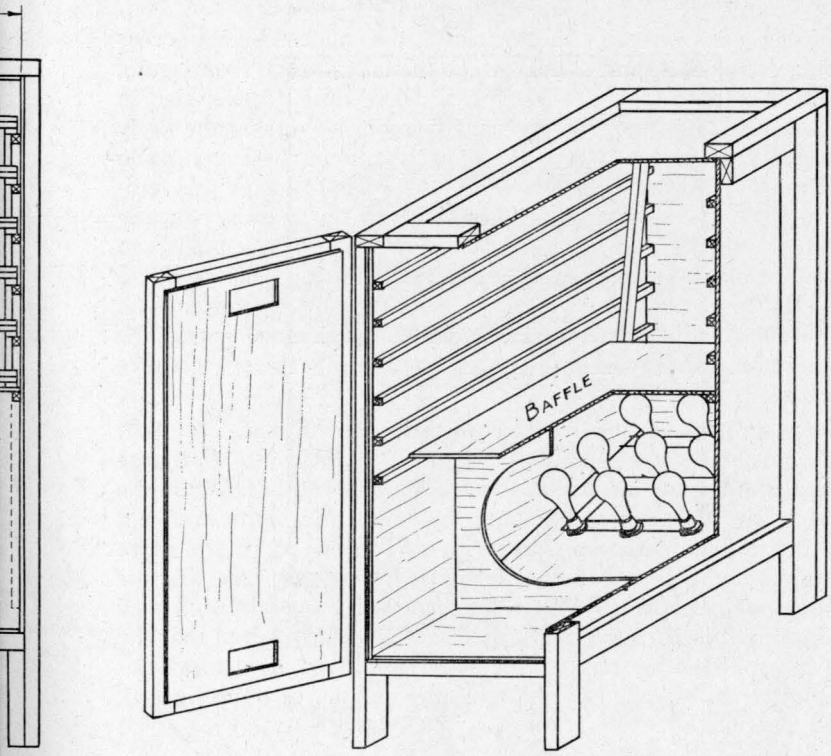
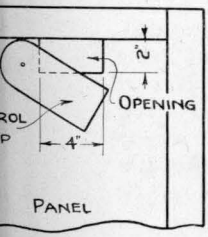
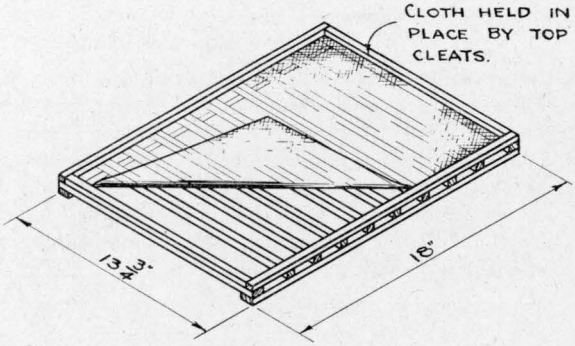

24"
1"
18"
5"
AIR EXHAUST
3"
3"
TRAY STOP
1/2" x 1/2" TRAY SUPPORTS
TRAY STOP
32"
39"
3"
3"
16 1/2"
7 1/2"
DOOR
10" FAN
14"
5"
AIR INLET
7"
1" x 2" FRAMING
14"
10" Fan
OPENIN
SIDE
FRONT
DOOR RE


17"
2"
4 1/2"
4 1/2"
6"
FRONT
14"
9 LIGHT BULBS
110-V A.C.
WIRING
ALL LAMPS
ON SINGLE CIRCUIT
17"
2"
4 1/2"
4 1/2"
6"
2 1/2"
4 1/2"
4 1/2"
2 1/2"
FRONT
SWITCHES
110-V A.C.
WIRING
FOR CONTROL OF LAMPS
WITH SWITCHES





AUST & INLET
PORTS
BOTTOM OF DOOR



TRAY DETAIL.

elements may be used instead. An electric fan circulates the air across the light bulbs to the back and then between the trays to the front again.

Nine 150-watt bulbs are needed for a dehydrator of this size in order to obtain the high temperature usually required during the early stages of the drying period, when the greatest amount of evaporation occurs. For most fruits and vegetables it is desirable to lower this temperature after the initial drying period. This can be done by varying the number of bulbs lighted. In a single circuit some of the bulbs can be unscrewed; or the bulbs may be connected in two circuits with 3 bulbs in one and 6 in the other which can be turned off by switches on the outside of the cabinet. To determine the temperature inside the cabinet, a thermometer may be inserted thru a hole into the space above the bottom tray.

Vents. As soon as the desired temperature is reached, the inlet and outlet vents, or ports, should be opened in order to discharge moist air and admit fresh air with a lower moisture content. While the temperature in the dehydrator is rising, however, the vents are kept closed because as the air becomes hotter, it can absorb more and more moisture. When there is no further increase in temperature, the air soon reaches a state where it will no longer absorb moisture and new air must be brought in thru the vents. It should be remembered that the vents are not provided for temperature control but for moisture control; temperature is controlled by changing the number of bulbs lighted, as described above.

Materials. The following materials are needed to build this dehydrator:

6 pcs. 1⅛" lattice, 8' long (*trays*)
4 pcs. 1" x 2" x 12' (*framing*)
2 pcs. parting stop, 12' long (*tray supports*)
30 sq. ft. panelboard
3 yds. 36-inch cheesecloth
10-inch electric fan
9 150-watt light bulbs
9 light-bulb sockets
10 ft. No. 14 insulated wire
2 electric switches
Nails, door hooks, door hinges

Other publications. For information on best drying temperatures, preparation of fruits and vegetables for drying, and best varieties of fruits to dry, see Illinois Circular 558, *Dehydrating Fruits and Vegetables at Home*. Another Illinois publication, *Food Dehydration in the Range Oven* (mimeographed), describes a dehydrator that can be built into an oven; such a construction, however, has a limited capacity. Farmers' Bulletin 1918, *Drying Foods for Victory Meals,* can be obtained from the U. S. Department of Agriculture, Washington, D. C.

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